

What Is Claimed Is:

1. Apparatus for filtering and aspirating emboli from a vessel comprising:  
a vascular filter having a blood-permeable element disposed on a guidewire, the vascular filter causing emboli to become deposited in the vessel in the vicinity of the vascular filter;  
a first catheter having proximal and distal ends, proximal and distal openings, and a lumen extending between the proximal and distal openings,  
wherein the first catheter is adapted to be advanced along the guidewire to a location in the vessel in the vicinity of the vascular filter to aspirate emboli.
2. The apparatus of claim 1 wherein the distal end of the first catheter is dimensioned so that the distal opening enters the blood-permeable element.
3. The apparatus of claim 1 wherein the distal opening of the first catheter is dimensioned so that the vascular filter may be at least partially retracted in the lumen of the first catheter.
4. The apparatus of claim 1 wherein the distal end of the first catheter is curved.
5. The apparatus of claim 1 wherein the distal end of the first catheter includes one or more aspiration holes disposed proximal of the distal opening.

6. The apparatus of claim 1 wherein the first catheter comprises a rapid exchange device.

7. The apparatus of claim 1 wherein the first catheter comprises an over-the-wire device.

8. The apparatus of claim 1 further comprising a second catheter having proximal and distal ends, proximal and distal openings, and a lumen extending between the proximal and distal openings, the lumen of the second catheter dimensioned to accept the first catheter therein.

9. The apparatus of claim 8 wherein the first catheter includes one or more aspiration holes disposed proximal of the distal opening and the second catheter selectively occludes the one or more aspiration holes.

10. The apparatus of claim 8 wherein the distal opening of the second catheter is dimensioned so that the vascular filter may be at least partially retracted in the lumen of the second catheter.

11. A method of aspirating emboli from a vessel comprising:

delivering a vascular filter having a blood-permeable element to a treatment site within a vessel so that emboli become deposited in the vessel in the vicinity of the vascular filter;

providing a first catheter having proximal and distal ends, proximal and distal openings, and a lumen extending between the proximal and distal openings;

advancing the first catheter to a location in the vessel so that the distal opening is in close proximity to the vascular filter; and

inducing suction at the proximal opening to aspirate emboli from the vessel through the distal opening into the lumen of the first catheter.

12. The method of claim 11 further comprising, while inducing suction, moving the first catheter slightly proximally and distally relative to the vascular filter.

13. The method of claim 11 further comprising, while inducing suction, advancing the distal end and distal opening of the first catheter within the vascular filter.

14. The method of claim 11 further comprising advancing the first catheter to retrieve at least a portion of the vascular filter through the distal opening and into the lumen of the first catheter.

15. The method of claim 11 further comprising:

providing a second catheter having proximal and distal ends, proximal and distal openings, and a lumen extending between the proximal and distal openings; and

advancing the second catheter over the first catheter to retrieve at least a portion of the vascular filter through the distal opening and into the lumen of the second catheter.

16. A method of aspirating emboli from a vessel in the vicinity of a stent, comprising:

delivering a vascular filter having a blood-permeable element to a treatment site within a vessel so that emboli become deposited in the vessel in the vicinity of the vascular filter;

delivering a stent into the vessel at a location proximal of the vascular filter;

providing a first catheter having proximal and distal ends, proximal and distal openings, and a lumen extending between the proximal and distal openings;

advancing the first catheter to a location in the vessel so that the distal opening is in close proximity to the stent; and

inducing suction at the proximal opening to aspirate emboli from the vessel through the distal opening into the lumen of the first catheter.

17. The method of claim 16 further comprising, while inducing suction, moving the first catheter slightly proximally and distally relative to the stent.

18. The method of claim 16 further comprising, while inducing suction, advancing the distal end and distal opening of the first catheter within the stent.

19. The method of claim 16 further comprising advancing the first catheter to retrieve at least a portion of the vascular filter through the distal opening and into the lumen of the first catheter.

20. The method of claim 16 further comprising:

providing a second catheter having proximal and distal ends, proximal and distal openings, and a lumen extending between the proximal and distal openings; and

advancing the second catheter over the first catheter to retrieve at least a portion of the vascular filter through the distal opening and into the lumen of the second catheter.

21. An intravascular aspiration system, comprising:

a first catheter having proximal and distal ends, proximal and distal openings, and a lumen extending between the proximal and distal openings;

a guidewire; and

wherein the first catheter is adapted to be advanced along the guidewire to a location in a blood vessel to aspirate emboli.

22. The system of claim 21, further comprising a vascular filter disposed on the guidewire, the vascular filter including a blood-permeable element.

23. The system of claim 22, wherein a nose cone is coupled to the blood-permeable element.

24. The system of claim 21 wherein the distal end of the first catheter includes one or more aspiration holes disposed proximal of the distal opening.

25. The system of claim 21 further comprising a second catheter having proximal and distal ends, proximal and distal openings, and a lumen extending between the proximal and distal openings, the lumen of the second catheter dimensioned to accept the first catheter therein.

26. The system of claim 25 wherein the first catheter includes one or more aspiration holes disposed proximal of the distal opening and the second catheter selectively occludes the one or more aspiration holes.

27. The system of claim 21, further comprising a syringe coupled to a side port of the first catheter.